HOBOT

Hobot Technology Inc.
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Window Auto-Cleaning Robot

WINBOT 68

User Manual

HOBOT

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The place and safety of this glass cleaning tool usage must be judged and responsible by the user. But also need to follow the instructions in this user manual.

Safety information

- Fasten the safety rope before use and tie to indoor fixture.
- Check out whether the safety rope is broken or the knot is loose.
- Set danger warning area downstairs for no-balcony window and door.
- Powerful magnets! Be careful of hand-caught, and keep the device away from the magnetic card or magnetic recording device.
- Prohibit the usage by children.
- No water spray onto the main terminal.
- Do not use on frameless window while the sunlight is very strong.
- Remove anything on the glass. Do not use on cracked glass. Reflective or coating glass might be slighted scratched due to dirt on the window.

Technical support

If any problems occur and the manual cannot provide the solution you need, please contact the local retailers or the local authorized dealers.

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Product introduction

First of all, thank you for choosing WINBOT 68, the revolutionary window auto-cleaning robot with Artificial Intelligence technology! Please read this user manual carefully before the usage of WINBOT. It has two terminals: the main terminal and the sub terminal. With the use of magnet on both terminals, WINBOT can stay on the window securely even with no power. WINBOT has two cleaning wheels to move freely on the window to clean both sides of the window at the time. With the use of auto cleaning mode, WINBOT can automatically sense the edges on the window and create a map of tracks to clean the whole window. The easy replaceable lint-free cloth is used on both cleaning wheels. The water dispenser on the sub terminal can clean the dirt. The robot can operate in either AUTO Cleaning or Manual Cleaning Mode according to the instructions from the remote controller.

Products and accessories

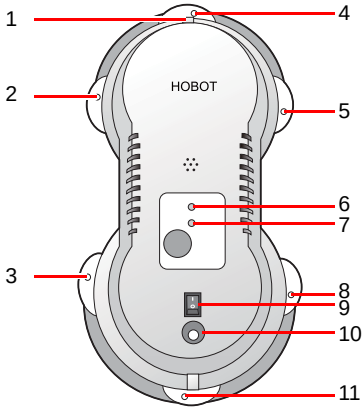
- Main Terminal x 1
- Sub terminal x 1 (including safety rope x 1, safety hook x 1)
- Remote controller x 1 (batteries included)
- Adapter x 1 (including AC power cord x 1)
- Cleaning cloth x 18
- DC Power extension cable (3.5 m) x 1
- Cleaning ring (including 3G purple ring x 2, 2G green ring x 2,1G blue ring x 4)
- User manual x 1
- Quick start guide x 1
- Optional: Water cleaning set (Small water pipe x 1, water pipe adapter x 1, water pump adapter x 1)

Product features

- For cleaning glass with 3~10mm thickness
- Permanent magnet, provide strong magnetic field for WINBOT to stay securely on the window, even with no power
- Infrared (IR) sensor to detect edges of windows automatically
- Anti-dropping control algorithm
- Voice safety prompt
- Clean double sides of window simultaneously. Water washing capability for outside windows
- 3 automatic cleaning modes for clean whole window
- Manual cleaning mode
- 3 different cleaning speeds

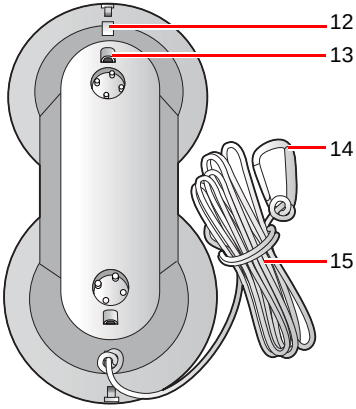
Getting to know the device

Main terminal



1. Hanging hole
2. Blue LED indicator #3
3. Blue LED indicator #6
4. Blue LED indicator #2
5. Blue LED indicator #1
6. Green LED indicator
7. Red LED indicator
8. Blue LED indicator #4
9. Power switch
10. DC power jack
11. Blue LED indicator #5

Sub terminal



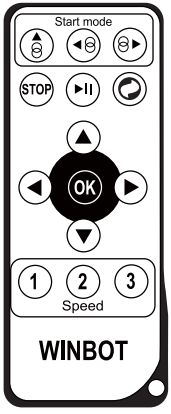
12. Hanging Hole
13. Small hole for connecting water pipe provided
14. Safety hook
15. Safety rope

LED indicators on the main terminal

Indicators		Meaning
	All the six blue indicators flash, and the green indicator is on.	The device works properly.

Indicators		Meaning
	The blue indicator that is close to the blockage flashes.	Blockage is detected.
	The blue indicators no. 1, 3, 4, and 6 flash 3 times.	5mm glass is detected.
	The green indicator is on.	Self-test is failed.
	The green indicator flashes.	The temperature of the motor is too high. The higher the temperature, the faster the indicator flashes.
	All of the blue indicators flash one after another counterclockwise.	The device is cooling.
	All of the indicators light up.	The device is having a risk of falling.
	The green and red indicators are on, the blue indicators no. 4, 5, 6 are on.	Magnetic attraction is too weak during the cleaning process.
	The green and red indicators are on, the blue indicators no. 1, 2, 3 are on.	Magnetic attraction is too strong during the cleaning process.

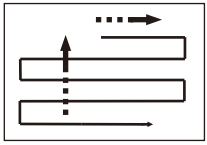
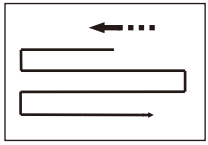
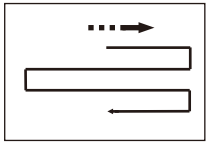
Introduction to the remote controller



Button	Function / Mode	Button	Function / Mode
	Auto Up then Down	1	Speed mode: Slow
	Auto Left then Down	2	Speed mode: Normal
	Auto Right then Down	3	Speed mode: Fast
	Manual Up		No use
	Manual Down	- OK	Press then OK to turn off/on 6pcs IR sensors (Turn Off if sunlight is very strong or pastes/sticker is on the window that interfere WINBOT movement.) DO NOT turn off for frameless window.
	Manual Left		
	Manual Right		
OK , STOP	Stop		

Please remove insulation spacer in the bottom of back of remote controller before using it. If you want to change the battery, just pull down the battery cover.

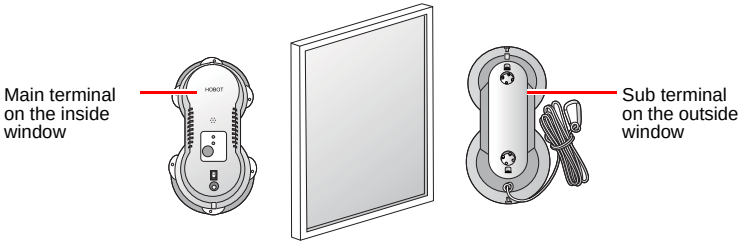
Modes and directions

Button on remote controller			
Mode	Auto up then down	Auto left then down	Auto right then down
Direction			

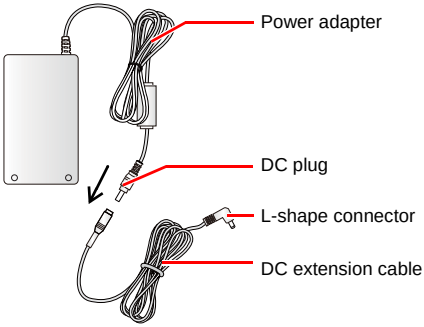
Using your device

Please handle with care to avoid any chance of hand-caught.

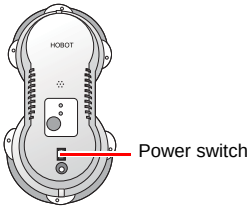
1. Select the appropriate cleaning rings for the main and the sub terminals. Refer to "Using the cleaning ring and the cleaning cloth" on page 5 and "Choosing the appropriate cleaning ring" on page 6 for details. Depending on the selected way of cleaning, different procedures may be required. Refer to "Ways to clean window" on page 8 for more information.
2. Securely fasten the safety rope and tie to the indoor fixture. See "Sub terminal" on page 2 for safety hook and safety rope.
3. Put the main terminal puts on the inside window and the sub terminal on the outside window to attract with each other.



4. Connect the DC extension cable with the power adapter then plug the L-shape connector into the main terminal.

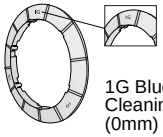


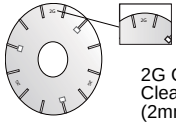
5. Connect the power adapter with the power cord.
6. Plug into the power.
7. Turn on the power on the main terminal.
8. Choose "Auto go up then down" mode from the remote controller. WINBOT will start automatically.
   Voice message will prompt if any issue during cleaning process.
9. Please turn off once the cleaning process is done and take off both terminals simultaneously from the window.

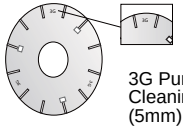


Using the cleaning ring and the cleaning cloth

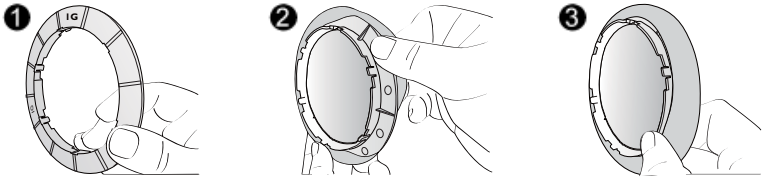
1. Use appropriate cleaning ring based on glass thickness to optimize attraction between the main and the sub terminals. Refer to "Choosing the appropriate cleaning ring" on page 6 for more information.


1G Blue Cleaning Ring (0mm)

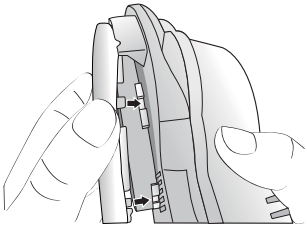

2G Green Cleaning Ring (2mm)


3G Purple Cleaning Ring (5mm)

2. Cover cleaning ring with cleaning cloth.



3. Put cleaning ring on wheels of the main and the sub terminals.



The purpose of using different cleaning ring is to ensure Glass thickness + cleaning ring thickness = 10mm.

Choosing the appropriate cleaning ring

Always make sure the thickness of the glass and the cleaning ring is 10mm in total. Refer to the following table to choose the appropriate cleaning ring.

Glass thickness	Main terminal	Sub terminal	Glass type
3mm	2G green cleaning ring (2mm)	3G purple cleaning ring (5mm)	• Mosaic glass • Matte surface glass • Small window • French window
5mm	1G blue cleaning ring (0mm)	3G purple cleaning ring (5mm)	
8mm	1G blue cleaning ring (0mm)	2G green cleaning ring (2mm)	• Large French windows • French window for new building
10mm	1G blue cleaning ring (0mm)	1G blue cleaning ring (0mm)	

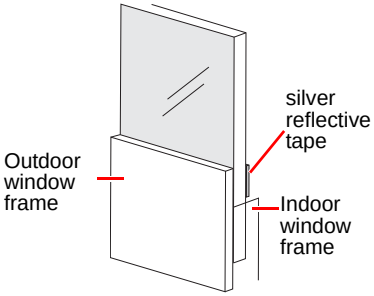
- If you do not know your glass thickness, please use the 5mm configuration for your first trial.
- While starting up, 4 lights will be twinkling 3 seconds if detected 5mm glass.
- For thinner glass with smaller number cleaning ring, magnetic field will be stronger and device might overheat easily. (Voice prompt).
- For thicker glass with larger number cleaning ring, magnetic field will be weaker and device might slip. (Voice prompt).
- Please do not use for glass thicker than 10mm. (Voice prompt).

WINBOT's working area

Defining working area

Use silver reflective tape to define WINBOT's working area and use black tape for reflective glass.

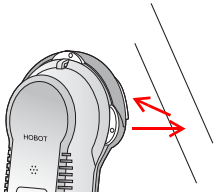
The silver reflective tape on the indoor window should be aligned with the outer frame.



Detecting working area

The IR sensors on WINBOT can detect

- Window frame
- Frame-less window
- Silver reflective tape



Notice:

- Please do NOT use on frameless window with strong sunlight.
- Please do NOT use on frameless matte surface glass.
- Use silver reflective tape for normal and black tape for reflective window.

Removing obstacles

Below situation will be recognized as running into obstacle.

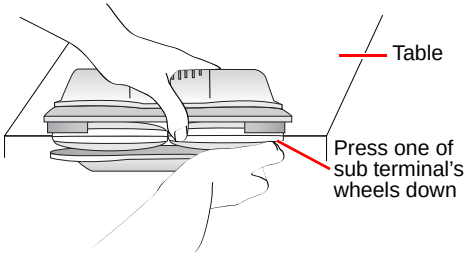
Situation	Possible solution
Partially opened window, the sub terminal will run into another window.	Please make sure all windows are closed.
Outdoor window frame is smaller than the indoor one, the sub terminal will hit onto outdoor frame than indoor one.	Tape silver reflective tape on indoor window side to align the tape with outer frame to restrict the terminal clean area. Please use black tape for reflective window.
Windows with pastes will affect the movement smoothness.	• The sub terminal switches smaller number cleaning ring while slipping. • The sub terminal switches larger number cleaning ring while overheat.

Ways to clean window

Method	Circumstances	Procedures
Dry clean	For window with small amount of sand/dust.	1. Use a clean cleaning cloth to polish. 2. You may spray some water or cleaning product on to the window when cleaning.
Wet clean with water cleaning set (optional accessory)	If it's rainy or humid outside or window is with large amount of sand/dust, water cleaning leads better performance than dry cleaning.	1. Hook the small water pipe on to the sub terminal for water spraying. 2. You may use the water pump adapter to connect the small water pipe to the water pump.

Frequently asked questions (FAQ)

Question	Possible solution
I don't know my glass thickness.	• Please check the section "Using the cleaning ring and the cleaning cloth" on page 5. • Try to start with 5mm ring.
In the self-test WINBOT does at the beginning, 3 LEDs on the top of WINBOT are ON.	Use a thicker cleaning ring (bigger number ring).
In the self-test WINBOT does at the beginning, 3 LEDs on the bottom of WINBOT are ON.	Use a thinner cleaning ring (small number ring).
WINBOT does not move smoothly, cannot climb up the window or move irregularly.	• Use a new, clean cleaning cloth. • The side screw of the main terminal might get loose, just tighten it.
WINBOT moves upward and slip down during the cleaning process.	• The suction may be too weak; please use a thinner (smaller number ring) cleaning ring. • If the window is very clean, the surface will becomes very slippery and so WINBOT couldn't be able to move upward. • The cleaning cloth on the main terminal might be too wet. Dry it.
In "Auto go up then down" ( ) mode, WINBOT slips and couldn't detect the upper frame of windows.	Press STOP and switch to or mode using the remote controller.
While cleaning, WINBOT pauses a lot, and there is a voice instruction: "Wait for WINBOT cooler, please wait."	• The cleaning cloth might be too dirty. Use a new, clean one. • The magnetic attraction might be too strong; please use a larger number cleaning ring for the sub terminal.
There is an abnormal shaking sound coming out from WINBOT.	The cleaning cloth might be too dirty. Use a new, clean one.

Question	Possible solution
WINBOT stops in the middle of the cleaning process due to blockages on the window.	If the cleaning wheels on the main and the sub terminals have not detached, you can do one of the following: 1. Switch the power off and on. 2. Move WINBOT to a safe location using the remote controller. 3. Remove blockages (if any) from the window. If the cleaning wheels on the main and the sub terminals have detached, this is quite dangerous. You should 1. Check whether the safety rope is fastened and tied to the indoor fixture. 2. Get the safety rope to the shortest. 3. Please check if the downstairs floor within the cleaning area is safe. 4. Turn off the power. 5. Slowly move the main terminal until the cleaning wheels on both terminals are facing each other. 6. Turn on the power. 7. Move WINBOT to a safe location using the remote controller. 8. Remove blockages on the window.
The main and the sub terminals are sucked by accident.	Hold main terminals to the edge of table and press one wheel of the sub terminal down then press another wheel, the terminals should be separated. 
How to confine WINBOT moving area?	Use silver reflective tape or white tape on indoor window side and use black tape for reflective window; IR sensor will detect the tape and turn around.

Question	Possible solution
What if WINBOT touches the window frame and makes alert or even stops with “running into obstacle” voice instruction?	• If the window is partially opened, the sub terminal will run into another window. Make sure all windows are closed. • If the outdoor window frame is smaller than the indoor one, WINBOT might hit or stuck into the window frame. You should use silver reflective tape or white tape on indoor window side to align with outer frame to restrict the terminal cleaning area. Use black tape for reflective window.
What if sunlight is very strong or pastes/ sticker is on the window that interfere WINBOT movement?	1. Put the main terminal on the non-sticker side of window. 2. Press ↻ then OK on the remote controller to turn off 6 IR sensors; do NOT turn off IR sensor while cleaning frameless windows.

Safety information about power adapter

- Use only the power adapter supplied with device. Use of another type of power adapter will result in malfunction and/or danger.
- Please use the proper electric outlet and make sure no heavy objects are placed on the power adapter or power cord.
- Allow adequate ventilation around the adapter when using it to operate the device. Do not cover the power adapter with paper or other objects that will reduce cooling.
- Do not use the adapter in a high moisture environment. Never touch the adapter when your hands are wet.
- Connect the adapter to a proper power source. The voltage requirements are found on the adapter.
- Do not use the adapter if it becomes damaged.
- Do not attempt to service the adapter. There are no service parts inside. Replace the unit if it is damaged or exposed to excess moisture. Consult your HOBOT dealer for help and maintenance.

General safety information

When setting up or operating your WINBOT, please pay special attention to the following:

- This manual is saved in the gift box for easy reference when needed.
- Make sure you follow all instructions and warnings related to the system.
- Do not use on glass thicker than 10mm.
- Do not expose your device to rain or excess humidity, and keep it away from liquids (such as beverages, faucets, and so on).
- Avoid exposing your device to direct sunlight, or intense light source, and keep it away from sources of heat (such as radiators, space heaters, stoves, and so on).
- Do not place the device in the vicinity of strong magnetic fields.
- Keep the device accessories away from children.